



Christchurch City Council

RESOURCE MANAGEMENT COMMITTEE AGENDA

FRIDAY 26 NOVEMBER 1999

AT 1.45PM

(PRIOR TO THE COMMENCEMENT OF THE CITY TOUR)

IN THE NO 1 COMMITTEE ROOM, CIVIC OFFICES

**Resource
Management
Committee:**

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Councillors David Buist, Carole Evans, Lesley Keast and Sue Wells.

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RR 10937

2.00PM CITY TOUR

1. APOLOGIES

2. CONSTRUCTION EFFECTS

RR 10937

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Corporate Plan Output: Environmental Health Policy Advice	

The purpose of this report is to assess issues and options as requested by the Resource Management Committee for the management of the effects of new construction in the City.

INTRODUCTION

At the subcommittee meeting held on 29 July 1999 to consider construction effects, Councillors Manning and Buist requested the preparation of, in effect, a Section 32 assessment to determine which effects create the most significant problems, whether these can be mitigated and what is the cost of doing so.

The effects identified by the subcommittee are:

- Noise
- Vibration
- Dust
- Heavy Vehicle movements
- Piling/construction techniques
- Duration and scale

Other issues raised were:

- How effective is NZS 6803 (Construction Noise)?
- If rules are imposed, what areas of the City should they apply to?
- What have other Councils done to address construction effects?

This report will examine each effect in turn before covering the additional issues and any other matters that are raised as a result of the investigations before drawing some conclusions.

NOISE

Clearly construction activities have the potential to cause noise and it is noise that can be expected to be the dominant effect from most construction activities. Common construction techniques involve the use of power tools, compressors, earthmoving machinery and nail guns just as a few examples. However, the noise is be expected to be intermittent, last only for the duration of the period of construction and is also expected to take place largely within normal working hours.

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These factors may in part account for the fact that whilst 9203 noise complaints were recorded by the Council during the 1998/9 financial year only 60 (0.65%) were ascribed to construction noise and of course some of those may be multiple complaints about the same premises. In the same period, 9,270 building consents were issued with a value of \$487M. For comparison, the 1997/98 year saw 8,573 noise complaints with 55 (0.68%) of those about construction and 8,054 building consents were issued to a value of \$509M. Clearly, construction noise is not a big issue, certainly not as much an issue with the general public as are noisy neighbourhood parties.

Some particular construction activities, such as pile driving, have greater potential than most activities to cause annoyance. Pile driving, however, is not expected to be a major component of construction in typical residential situations, but is likely to be more common in very large commercial constructions which tend not to be in residential environments. Obviously, however, the occasion can arise where there is a significant building work requiring extensive foundation preparation and pile driving sited in a residential area. In such situations some measure of complaint can be expected and at least the site must be investigated and consequently some action may have to be taken.

It is very difficult to ascertain how often this situation is likely to occur, however, experience noted from complaint and consent data to date would indicate that it is very rare.

The Resource Management Act 1991 (RMA) is the principal statute that the Council is likely to use in such cases, given that it includes specific provisions and powers with respect to noise.

The RMA at Section 16 states *“(1) Every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.”*. Further in sections 326, 327 and 328 TLAs have the power needed to action complaints of excessive noise.

The Health Act 1956 also contains provisions under which action can be taken in respect of noise complaints. Section 29 (ka) defines as a ‘nuisance’ *“where any noise or vibration occurs in or is emitted from any building, premises or land to a degree that is likely to be injurious to health.”*

In deciding to take action against noise a choice has to be made between these statutes; action cannot be taken under both for the same offence. The specific provisions and larger penalties available under the RMA make it the statute of choice in these matters rather than the Health Act.

VIBRATION

Vibration often occurs in conjunction with noise and can be the result of heavy vehicle/machinery movements and construction techniques. The Council does not actually record complaints of vibration as a separate category hence it is difficult to quantify its occurrence but typically it is less commonly raised in complaints than is noise.

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Vibration of sufficient strength and intensity may pose a risk to structures and requires specialist measurement and assessment equipment not usually possessed by Councils. Investigation is typically undertaken by a suitably experienced engineer.

The RMA at 326 (2) specifically states that vibration is included in the definition of excessive noise, hence the excessive noise powers can be invoked in complaints of vibration.

The Health Act section 29 also refers to vibration as a nuisance in (ka) leaving action possible under this act a choice as well.

The purposes and principles of the Building Act 1991 section 6 (1) (a) and (b) are to provide for necessary controls relating to building work and the use of buildings...and the co-ordination of those controls with other controls relating to building use and the management of natural and physical resources. This appears to be a clear reference to that Act being intended to be co-ordinated with the RMA.

Furthermore, in section 6(3) it is stated that in determining the extent to which the matters provided for in subsection (1) shall be the subject of control, due regard shall be had to the national costs and benefits of any control, including (but not by way of limitation) safety, health and environmental costs and benefits.

Finally, it is stated at 6(2)(d) that in achieving the purposes of the Building Act particular regard is to be made to "*Provide for the protection of other property from physical damage resulting from the construction, use and demolition of any building.*" However, because the Building Code has no performance standards relating to the effects of construction noise and vibration on other property, it would be very difficult to carry out enforcement action under the Building Act.

Typically the developers liability insurance would be expected to cover any damage the developer causes to other property.

DUST

The creation of dust from construction is likely to be related both to the nature and size of the project as well as to the weather. Dry, windy conditions may cause dust to be transported off site in sufficient quantities to become a nuisance.

In the 1998/99 financial year 202 complaints of air pollutants, including odours, fumes, dust and smoke were received by the City Council. It is not a simple task to sort out the dust complaints attributable to construction from the total and that data is currently unavailable.

The Canterbury Regional Council recorded two complaints of dust from construction activities in the period 1 January 1998 to 30 September 1999. Much more common are complaints of dust from land subdivision activities than building construction.

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The control of dust nuisance, however, is usually covered in the engineering approval process under the specification for the works produced by the consultant and approved by the Council. Should a complaint relating to dust be received, the consultant is contacted and requested to enforce the general conditions of contract which specifically requires the contractor to allay the dust nuisance. Control is usually straightforward and can be achieved by spraying the site with water sufficient to damp down the dusty areas.

Where there are no specific consent conditions the Health Act 1956, section 29 (o) "*Where any street, road, right of way, passage, yard, premises, or land is in such a state as to be offensive or likely to be injurious to health*", could also be used to require the abatement of a dust nuisance.

HEAVY VEHICLE MOVEMENTS

The number of heavy vehicle movements required by a construction is likely to be a function of the size and scale of development. The effects of vehicles may also go beyond noise and vibration and include damage to roads and footpaths and deposition of soil along roads.

Where construction activities cause damage to council property City Streets Unit monitor the situation and either require the developer/builder to pay for the damage or make good the damage to the Council's satisfaction using the Local Government Act 1974.

The use of heavy vehicles cannot be avoided in the larger developments but, again, the larger developments tend to be in the commercial and industrial areas of the city and away from residential environments. Out of 1,847 residential buildings constructed last financial year only two or three were likely to have involved large scale earthworks.

PILING/CONSTRUCTION TECHNIQUES

Piling and construction techniques are not an effect in themselves, but are likely to be the cause of other effects such as noise and vibration. As in most situations, the choice of piling or construction technique may have an impact on the noise and vibration produced and the length of time the noise may be expected to continue as a result of the time taken to complete the work.

Whilst the size of the development is likely to be a reasonable indicator of the size of potential adverse effects, pile driving may be required on much smaller projects depending on the site conditions, however, fewer and less deep piles may be required for smaller buildings. Because of these factors it is not a simple exercise to discover how often piling might take place in a living zone. Conditions cannot be placed on building consents, nor can methods of construction be imposed on building consents under the Building Act, however, they may be able to be imposed on a resource consent under the RMA if such a consent is required.

There are alternatives to pile driving just as there are alternative methods of pile driving. A specialist report on piling technology was prepared for the Council in July 1999. This report gives us more information on the issues and options available should the adverse effects of piling be sufficient for the Council to contemplate enforcement action.

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DURATION AND SCALE

Again these are not strictly speaking effects, however, they will be important factors in determining how much disruption may be caused and for how long. Controlling the duration can be one of the key methods in mitigating the adverse effects. Duration relates both to the duration of the entire project as well as the duration of the noisy work each day.

HOW EFFECTIVE IS NEW ZEALAND STANDARD 6803P?

NZS 6803P (1984) 'The measurement and assessment of noise from construction, maintenance and demolition work', is the current New Zealand standard applicable to construction noise. As with all standards, compliance with it is not a legal requirement unless given effect to by a rule in a district plan, a resource consent or some other statute. However, compliance with it can be expected to reduce the level of noise annoyance and can serve as a starting point on any discussion between affected parties where there is a dispute. Compliance with the standard is likely to mean that the noise is not 'excessive' in terms of the RMA91, however, the noise may still be deemed 'unreasonable' in terms of section 16 and action can still be taken.

The standard covers the expected areas of concern in terms of recommended hours of work, noise levels and adjustments that can be made to noise levels to take into account the duration of the work. It also includes an exemption clause for emergency works and works that cannot be carried out during normal working hours.

NZS 6803P (1984) is a provisional standard that, whilst current, is under review. The draft dated 4 July 1998 offers some changes over the current standard in that the descriptors used are to be Leq and L90. It also has reduced the time periods from four to three with the daytime period starting at 7.00am. The new draft standard clearly has been written with the intention that it be adopted by Councils into district plans. Certainly, should the Council be of a mind to adopt a standard in the City Plan, then it would be prudent to wait until the latest version has been released and this is expected to be before the end of 1999.

It is not uncommon for resource consents to contain a condition requiring that construction noise comply with NZS 6803P. At least 14 Environment Court decisions have imposed the standard in conditions to permits and consents, with Judge Sheppard noting in *Body Corporate 164980 v Auckland City Council* (A087/96): "*In making decisions under the RMA the New Zealand Standards are not binding, and compliance is not decisive; but they are commonly used and are generally accorded respect. NZS 6803P is only a provisional standard but, in the absence of an approved standard about construction noise, is a useful starting point.*"

One of the difficulties that is faced in the central city in using NZS 6803P is that the background noise levels caused by normal traffic are already very close to or exceed the background levels recommended in the standard before the addition of any construction noise. NZS 6803P(1984) recommends that daytime background sound (L95), be 60dB(A).

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In 1996 typical daytime central city background noise levels were between 59 and 61 dB(A). This compares with some work done on construction noise in 1987/8 that found background levels of 58 to 62 dB(A) in the central city. It was noted at that time that noise levels were already in excess of the standards without the presence of construction noise, hence the applicability of NZS 6803 for the central city was in doubt at that time.

It would appear that the noise climate in the central city has not altered significantly and that traffic noise is still by far the dominant factor. This higher background level will tend to mask construction noise, whereas in a residential area with a lower background noise environment, construction noise will be more obvious.

The background levels in residential areas are much more likely to be at levels where the standard is applicable, with the exception being for cases where there is a busy road nearby.

CONSTRUCTION EFFECTS WITH REGARD TO THE CITY PLAN AND THE RMA

The City Plan currently contains no rules regarding construction noise, vibration or other effects. In fact, construction noise is specifically exempted in Vol 3, Part 11, 1.2.3 (i). However, it is pointed out in clause 1.2.2, 'Special provisions for the control of noise' that, notwithstanding whether or not an activity complies with the rules or is subject to the exclusions, the Council may initiate procedures under Part 12 of the Act.

Construction effects are clearly effects that Councils can have regard to when assessing resource consent applications. The Court of Appeal case *Bayley v Manukau City Council* CA 115/98, makes it clear that "*'effect' in section 3 includes temporary effect, which requires the authority to consider adverse effects which may be created by the carrying out of construction work.*" This does not mean, however, that an authority is obliged to have rules regarding such effects in its Plan.

As mentioned earlier it is not uncommon in Environment Court rulings where construction noise has been an issue, for a condition requiring compliance with NZS 6803P (1984) to be attached to a resource consent.

In the City Plan, where larger constructions for residential or other activities (greater than 550m² in floor area) are proposed in Living 1, 2, H, RS, RV, TMB and Deferred zones, a resource consent for a discretionary activity is required. This example can be found in Vol 3, Part 2, Rule 2.3.6 'Building size and separation', which arises from Variation 36. In assessing applications under these rules, construction effects could also be addressed where it might reasonably be expected that large construction projects might cause a temporary noise problem.

Some 60% of the urban area was zoned Living 1, 2 or Hills in 1996, representing 21.0% of the total city area. This will have increased somewhat as a result of City Plan decisions and exact data is not yet available, but it is estimated that some 25.4% of the total city area is now zoned L1, 2, H, RS, RV, TMB or deferred.

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Some aspects of the Plan require consent as a limited discretionary activity where noise effects have not been identified as effects to have regard to. In most cases these are expected to be activities with a lesser level of environmental impact. However, there is no reliable way to link construction noise effects and other matters requiring a resource consent. For example, a small-scale development or alteration may still produce significant noise.

To cover noise effects via rules relying on rules such as Part 2, 2.3.6 cannot guarantee that all construction effects for resource consents across the city are assessed. A rule applying noise criteria city or zone wide would mean a resource consent is required to exceed those levels. As already indicated the scale of the problem does not seem in keeping with this approach.

The standard has attempted to get around this issue by including within it a clause to exempt construction noise created in an emergency situation and noise that cannot meet the hours or levels specified in the standard. The method specified for exemption is for the builder to apply to the Council stating why exemption is needed. Granting exemption is at the sole discretion of the Council. This is not a formal resource consent procedure and in fact short circuits the need for a consent. It is arguable that this approach in a rule is not lawful in that it does not provide certainty, however, it is acceptable for a standard.

WHAT HAVE OTHER COUNCILS DONE?

In the cases where District Plans contain any rules at all regarding construction noise the rule typically refers to a requirement to comply with NZS 6803P (1984) or has adopted its own slight variation to suit local conditions based on that same standard. I have found five plans that include rules for construction noise and all are based on NZS 6803P(1984).

The Wellington City Plan, for example, has adopted the standard in its entirety, including the exemption clause that Wellington is using to require builders to 'apply' to breach the rules for work that is noisier than permitted during normal working hours or takes place outside of normal working hours. As mentioned earlier such a rule does not provide the certainty required of rules.

OTHER OPTIONS

A bylaw covering construction noise is a possibility under the Local Government Act 1974 or the Health Act 1956. A bylaw can reference a standard such as NZS 6803P(1984). Action under a bylaw would be similar to action taken under the RMA in terms of the work involved in assessment and monitoring. The process to proceed with a prosecution is no less time consuming and may in fact take longer to get through the District Court than to take proceedings through the Environment Court, as there is no provision for an interim order.

Bylaws are considered to be weaker instruments of law than powers conferred directly by a statute. Bylaws are also not developed with the same level of consultation as required by the RMA.

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TABLE OF OPTIONS CONSIDERED

Option	Points in favour	Points against
Do nothing further and rely on current powers.	<ul style="list-style-type: none"> No further work required. Does not draw attention to the issue and potentially inflate it. Council already has the power to deal with excessive and unreasonable noise. Can deal with the issues on a case by case basis and derive unique solutions. Not bound to rules, meaning more flexibility. Not many complaints are made given the number of building consents issued and other noise complaints made. 	<ul style="list-style-type: none"> Reactive stance rather than proactive. Need to assess each issue after it arises and citizens are already affected. Possible expense in assessment and enforcement as the need arises.
Issue advice pamphlet based on NZS 6803P(1984) (or 1999 when released) and alternative building techniques.	<ul style="list-style-type: none"> Highlight the issues with developers and builders with a view to avoiding potential complaints. Can be used before construction commences to help avoid potential nuisance. Comparatively low cost and 'friendly' approach. Potentially fewer assessment and enforcement actions. 	<ul style="list-style-type: none"> May make no difference to the rate of complaints. Some expense in research, development and printing of pamphlet. Still some assessment and enforcement costs as needed.
Require construction noise assessment as part of AEE (look out for pile driving) and place consent conditions on resource consents where there is major construction.	<ul style="list-style-type: none"> Can be used as part of existing rules such as Variation 36. Possibly fewer assessment and enforcement actions required. Can assess each application individually. Consent condition gives a clear starting point for the assessment of excessive noise. 	<ul style="list-style-type: none"> Does not cover construction where resource consent is not required or where the existing rules don't apply. Requires monitoring. May increase the cost of construction. May increase the assessment costs.

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Option	Points in favour	Points against
Instigate plan variation or Plan Change requiring compliance with NZS 6803 or variant.	<ul style="list-style-type: none"> • Clear requirement to meet a performance standard. • A clear legal starting point for the assessment of excessive noise. • Gives legal standing to NZS 6803P(1984). (or whatever standard is chosen). 	<ul style="list-style-type: none"> • Consultation, drafting, notification, hearings, and decision process is time consuming and expensive. • There are situations and locations in the city where the recommended noise levels may already exceeded without construction noise being present. • Requires consents to be made. • Requires consent monitoring. • Still won't necessarily reduce nuisance unless publicity highlights the presence of the rules. • Will require further variations to cope with alterations of the standard. • May increase the cost of construction.
Adopt NZS 6803 or variant into a bylaw under the Local Government Act 1974 or Health Act 1956.	<ul style="list-style-type: none"> • Clear requirement to meet a performance standard. • Gives legal standing to NZS 6803P(1984), (or whatever standard is chosen). • Enables District Court action to take place should an offence occur. 	<ul style="list-style-type: none"> • Potentially slower course of action through the District Court as no interim enforcement order is possible. • Lesser maximum penalty of \$500. • Bylaws are the least powerful form of the law. • Method of enforcement and costs involved remains the same as for the RMA enforcement process. • Unlikely to reduce the number of complaints.

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CONCLUSIONS

The occurrence of significant adverse effects from construction activities appears, from the evidence we have to date, to be very sporadic and rare given the level of building activity in the City. The great majority of construction activities go ahead with a very low level of complaint. The key problem area is very large construction projects sited in residential areas. This can be expected to raise complaints as background noise levels are lower and a higher standard of amenity is expected in residential areas.

There appear to be few advantages to the Council in adopting NZS 6803P (1984) into a rule in the City Plan. The low number of complaints received and the powers already available to the Council to take action in cases of excessive or unreasonable noise make a Variation to the Plan a low priority and a Plan Change unlikely to alter the current situation greatly.

A non regulatory course of action that may be worth pursuing is to prepare an advisory pamphlet that can accompany other building/resource consent advice available at service centres etc, so that there is more awareness of the issues, particularly when large constructions are being planned.

Applications for resource consents involving large constructions, particularly in residential areas, should consider the need for an assessment of the potential for adverse construction effects and the need for conditions to be placed on any resource consent that may be issued. There may be limitations as to how far this approach can be taken in cases where consent is for a discretionary (restricted) activity.

The Environmental Services Unit now discusses, in advance, applications with applicants, especially where there is piling involved in a development, and is proposing to monitor the noise created by any test piling that may be required so as to better assess the likely impact.

- Recommendation:**
1. That an advisory pamphlet be prepared to alert developers and builders to the need to assess the potential for adverse construction effects.
 2. That applications for resource consents involving large construction projects, particularly in residential areas, be assessed as to the need for control of adverse construction effects.
 3. That more data be collected on the noise effects of construction.
 4. That the possibility of a Variation to cover construction effects in L3 and L4 zones be further investigated.
 5. That this report be referred to the Resource Management Committee for further consideration.

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**Chairman's
Comments:**

It is clear that construction noise does not produce a large number of complaints to the Council. However, it is also clear that one or two projects have caused quite widespread distress. Resource Consent Panels are aware of the implications of the obiter dicta in the Bayley Case. The question is whether a rule is needed to cover construction effects when buildings can be constructed as of right.

While noise is a feature of all constructions, it is more likely to be problem with large structures where the work is over a more prolonged period and includes a larger number of significant noise events. It is also a reasonable assumption that the problem is greater in Residential Zones.

In the Living 1 and 2 zones all buildings with a floor area of more than 550m² are a fully discretionary activity as a result of Variation 36. This limits the real concern to the L3 and L4 zones. The frequency of the problem would make it difficult, under Section 32 of the Resource Management Act, to justify a variation at this point. However, it is clear that the situation needs on-going monitoring, and the possible of a variation should not be excluded if large-scale construction effects continue to pose a problem for communities.